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UNITED STATES PUBLIC HEALTH SERVICE

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COMMUNITY SICKNESS SURVEY

ROCHESTER, N. Y., SEPTEMBER, 1915

BY

LEE K. FRANKEL, PH. D.

Sixth Vice President

AND

LOUIS I. DUBLIN, PH. D.

Statistician

Metropolitan Life Insurance Co., New York

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COMMUNITY SICKNESS SURVEY.

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By LEE K. FRANKEL, Ph. D., Sixth Vice President, and LOUIS I. DUBLIN, Ph. D., Statistician, Metropolitan Life Insurance Co., New York.

An unemployment survey made by the Metropolitan Life Insurance Co. in conjunction with the Bureau of Labor Statistics of the Federal Government, during 1915, and covering over a million wage earners in selected cities of the United States, developed the interesting fact that 11 per cent of the unemployment was caused by sickness or accident disability. Over 1 per cent (1.2) of all the wage earners canvassed were unemployed on account of illness. The figure varied somewhat from city to city. The maximum was in Duluth, where 2.4 per cent of all wage earners were unemployed because of illness; the minimum was in Milwaukee, where 0.8 per cent were so unemployed.

These facts, together with a desire to measure approximately the amount of illness prevailing in American communities, have led the executives of the Metropolitan Life Insurance Co. to institute a plan to determine the amount of sickness, similar to that utilized in surveying unemployment. As in the latter investigation, the company availed itself of the services of its field organization, and the city of Rochester was chosen as the community in which the initial survey was to be undertaken. The company's agency staff in Rochester was addressed and carefully instructed in the details of recording the required items of information on the schedule on page 3.

Briefly, this schedule required the statement of sex, age, occupation, the disease or cause of disability, length of illness to date, whether a physician was in attendance, and the extent of the disability. A statement of sex, age, and occupation was required for each member of the family whether sick or not; the remaining items were required for the sick alone. Agents were urged to reach every family in their field, and to be sure to record the required facts with reference to every member of the families visited. The reverse side of the form contained a few simple directions for completing the required items, which were self-explanatory; they helped very materially to advance the precision and completeness of the statements offered.

The examination of the returns showed that the company's agents had secured a substantial body of facts on sickness among members of the families canvassed. The results, moreover, are considered typical of the industrial population of the city of Rochester during the week of September 13, 1915. In all, 7,638 families were reached, including 34,490 persons. Our sample, therefore, was 14 per cent of the total population of Rochester, which we believe is sufficiently

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large to insure a fair degree of accuracy in our measure of the amount of sickness in the industrial community as a whole. An analysis of such items as occupation and the general characteristics of the families as to size confirms this conclusion.

[Face of card.]

Metropolitan Life Insurance Company—Sickness Census.

Facts about all members of family on....., 1915.

[illegible]

[Reverse side of card.]

INSTRUCTIONS TO AGENTS.

Sickness Census, 1915.

1. A slip should be handed in to the superintendent for every family visited. Where there is no one sick, write the words "No one sick" across columns 5 to 8 of the schedule.
2. Every item called for should be filled out for each person in the family as per sample schedule.
3. The columns relating to sex, age, industry, and occupation should be filled out for every person in the family whether sick or not.
4. The sick should include:
 - (a) Those persons who are up and about, but are unable to work because of sickness or accident.
 - (b) Those persons who are confined to bed at home because of disease or accident.
 - (c) Those persons who are receiving treatment in hospitals or other institutions for the sick.
5. The question "How long sick to date?" should be answered definitely in days, weeks, or months.

Extent of Disability.

The cases of sickness were considered under two heads, namely, those where the illness resulted in incapacity and those which involved no such disability for work. The following table presents the number of cases of sickness under these two heads for each of the two sexes.

TABLE 1.—*Sickness classified by extent of disability and by sex.*

Extent of Disability.	Persons.		Males.		Females.	
	Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.
All classes.....	798	100.0	356	100.0	442	100.0
Unable to work.....	661	82.8	297	83.4	364	82.4
In bed.....	220	27.6	88	24.7	132	29.9
At home.....	135	16.9	47	13.2	88	19.9
In hospital.....	85	10.7	41	11.5	44	10.0
Up and about.....	441	55.2	209	58.7	232	52.5
Able to work.....	70	8.8	32	9.0	38	8.6
Ability to work not specified.....	67	8.4	27	7.6	40	9.0

It will be seen that of the 798 cases of sickness, 661, or 82.8 per cent, belonged to the former class, and 70 cases, or 8.8 per cent, belonged to the latter class. In addition, 67 cases, or 8.4 per cent of the total, gave no statement as to the ability of the patient to work. It is assumed that these 67 cases should be combined with the 70 cases of those who were able to work, to make a total of 137, or 17.2 per cent, under this category. Of the persons unable to work, 220, or 27.6 per cent of the total cases, were confined to bed, that is, either at home or in a hospital. It is interesting to observe that 10.7 per cent of all the cases were receiving hospital treatment. On the other hand, 441 cases, or 55.2 per cent, were unable to work but were, nevertheless, up and about. The conditions as to the extent of disability are very similar for the two sexes, a fact which confirms our belief in the essential accuracy of the statements of sickness returned in this survey.

We should remember that the above figures represent the sicknesses of the week beginning September 13, 1915, and are subject to qualification for seasonal variation. During this week in Rochester the temperature ranged from 62° to 82°, the barometric pressure varied slightly above and below 29.5 inches Hg, and the rainfall was 0.6 inches. The week as a whole was a favorable one for weather conditions.

Sickness by Sex and by Age Period.

We shall now examine the distribution of the cases of sickness in the various age periods, and shall observe the rates per thousand exposed in these periods. Table 2 presents these data for the two sexes under two heads: First, all the sick regardless of the disabling effect of the illness, and second, the sick persons unable to work.

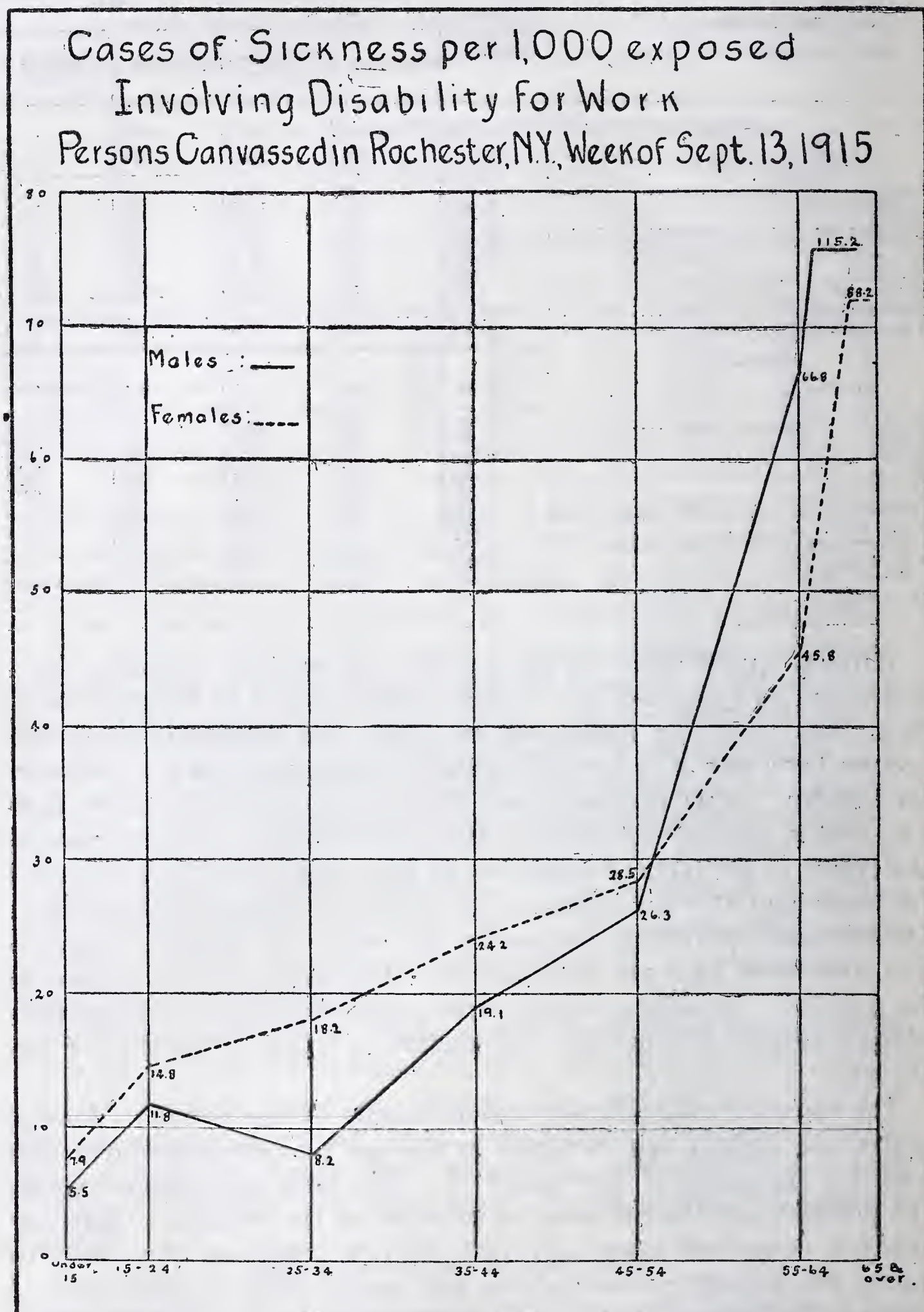
TABLE 2.—*Sickness, number of cases, and rates, by age and by sex.*

Sex and age period.	Number of persons exposed.	Totalsick persons.		Sick persons unable to work.	
		Number.	Per 1,000 exposed.	Number.	Per 1,000 exposed.
MALES.					
All ages.....	16,644	356	21.4	297	17.8
Under 15.....	5,064	40	7.9	28	5.5
15 to 24.....	2,964	41	13.8	35	11.8
25 to 34.....	3,164	36	11.4	26	8.2
35 to 44.....	2,411	57	23.6	46	19.1
45 to 54.....	1,594	51	32.0	42	26.3
55 to 64.....	958	71	74.1	64	66.8
65 and over.....	486	60	123.5	56	115.2
Unknown age.....	3				
Ages 15 and over.....	11,577	316	27.3	269	23.2
FEMALES.					
All ages.....	17,846	442	24.8	364	20.4
Under 15.....	5,301	52	9.8	42	7.9
15 to 24.....	3,388	54	15.9	50	14.8
25 to 34.....	3,291	75	22.8	60	18.2
35 to 44.....	2,360	69	29.2	57	24.2
45 to 54.....	1,720	62	36.0	49	28.5
55 to 64.....	1,158	63	54.4	53	45.8
65 and over.....	601	67	111.5	53	88.2
Unknown age.....	27				
Ages 15 and over.....	12,518	390	31.2	322	25.7
Sex unknown.....	17				

Without qualification of age period or extent of disability, 21.4 males and 24.8 females out of each 1,000 living were reported sick. Sicknesses involving incapacity to follow the daily pursuits of life occurred at a rate of 17.8 per thousand for males and 20.4 per thousand for females. If we eliminate both the living and the sick under ages 15—that is, children for whom it was more difficult to obtain a precise statement of the facts of sickness—we have rates of 27.3 per thousand for males and 31.2 per thousand for females, including all sicknesses; for sicknesses involving incapacity for work, the rates for ages 15 and over were 23.2 per thousand for males and 25.7 per thousand for females. Broadly speaking, over $2\frac{1}{2}$ per cent of the working population canvassed were sick and unable to work at the time of the survey.

The rates for total sickness varied sharply by age periods. Among males, the highest rate occurred in the age period 65 and over; the least for the group of ages under 15. The same age periods exhibit the greatest and least amount of sickness for the females. Since our study is concerned essentially with sickness involving incapacity to work, the following observations will apply solely to that class of cases. The rates of sickness among females incurring disability were distinctly higher than for males for all ages up to 54. From age 55 onward the male sickness rate exceeds that of the females. The illustration on page 6 shows the comparative values of the sickness rates of the two sexes on a basis of age. The excess

of female disability begins with the group of ages under 15 and becomes exceptionally marked at the age period 25-34, where 25 cases of childbirth and its complications serve to increase the rate.



Without these cases the rate for females at this age period would be 10.6 per thousand, or 42 per cent less than the former figure. The rate, even with an allowance for puerperal conditions, is in excess of that for males at the same age period.

Sickness in Rochester, by Disease.

The distinction between the groups "able" and "unable" to work will again be maintained in our discussion of the diseases and conditions discovered. For the latter and larger group of 661 cases, 170, or 25.7 per cent, represented "diseases of the nervous system and of the organs of special sense." This was the largest group of diseases. The diseases and conditions comprehended under the term "general diseases" constituted 166 cases, or 25.1 per cent, of the total. Diseases of the nervous system and the general diseases comprise more than one-half of the total sicknesses.

TABLE 3.—*Sickness among 34,490 persons in Rochester, N. Y., week beginning Sept. 13, 1915, classified by disease or condition and by extent of disability.*

Disease or condition.	Persons sick and unable to work.			Persons sick but able to work.		
	Number of cases.	Per cent of total.	Cases per 100,000 exposed.	Number of cases.	Per cent of total.	Cases per 100,000 exposed.
All diseases and conditions.....	661	100.0	1,916.5	137	100.0	397.2
General diseases.....	166	25.1	481.3	41	29.9	118.9
Typhoid fever.....	4	.6	11.6	.....	.....	.....
Whooping cough.....	12	1.8	34.8	3	2.2	8.7
Tuberculosis of the lungs.....	37	5.6	107.3	3	2.2	8.7
Other forms of tuberculosis.....	3	.5	8.7	1	.7	2.9
Cancer, all forms.....	10	1.5	29.0	1	.7	2.9
Rheumatism.....	73	11.0	211.7	26	19.0	75.4
Other general diseases.....	27	4.1	78.3	7	5.1	20.3
Diseases of the nervous system and of the organs of special sense.....	170	25.7	492.9	32	23.4	92.8
Diseases of the spinal cord.....	22	3.3	63.8	5	3.6	14.5
Cerebral hemorrhage, apoplexy, and paralysis.....	34	5.1	98.6	4	2.9	11.6
Mental alienation.....	25	3.8	72.5	1	.7	2.9
Epilepsy.....	16	2.4	46.4	2	1.5	5.8
Other diseases of the nervous system..	61	9.2	176.9	14	10.2	40.6
Diseases of the eyes and ears.....	12	1.8	34.8	6	4.4	17.4
Diseases of the circulatory system.....	35	5.3	101.5	10	7.3	29.0
Organic diseases of the heart.....	28	4.2	81.2	6	4.4	17.4
Other diseases of the circulatory system	7	1.1	20.3	4	2.9	11.6
Diseases of the respiratory system.....	56	8.5	162.4	16	11.7	46.4
Diseases of the nasal fossæ.....	11	1.7	31.9	3	2.2	8.7
Bronchitis.....	11	1.7	31.9	.....	.....	.....
Pneumonia—all forms.....	6	.9	17.4	1	.7	2.9
Asthma.....	16	2.4	46.4	4	2.9	11.6
Other diseases of the respiratory system	12	1.8	34.8	8	5.8	23.2
Diseases of the digestive system.....	72	10.9	208.8	24	17.5	69.6
Diseases of the pharynx.....	6	.9	17.4	4	2.9	11.6
Ulcer and other diseases of the stomach (cancer excepted).....	29	4.4	84.1	11	8.0	31.9
Diarrhea and enteritis.....	8	1.2	23.2	2	1.5	5.8
Appendicitis.....	14	2.1	40.6	2	1.5	5.8
Hernia, intestinal obstruction.....	6	.9	17.4	.....	.....	.....
Other diseases of the digestive system.	9	1.4	26.1	5	3.6	14.5
Nonvenereal diseases of the genito-urinary system and annexa.....	27	4.1	78.3	5	3.6	14.5
Diseases of the kidneys and annexa...	18	2.7	52.2	5	3.6	14.5
Other diseases of the genito-urinary system and annexa.....	9	1.4	26.1	.....	.....	.....

TABLE 3.—*Sickness among 34,490 persons in Rochester, N. Y., week beginning Sept. 13, 1915, classified by disease or condition and by extent of disability—Continued.*

Disease or condition.	Persons sick and unable to work.			Persons sick but able to work.		
	Number of cases.	Per cent of total.	Cases per 100,000 exposed.	Number of cases.	Per cent of total.	Cases per 100,000 exposed.
The puerperal state.....	25	3.8	72.5			
Normal childbirth.....	24	3.6	69.6			
Puerperal diseases of the breast.....	1	.2	2.9			
Diseases of the skin and annexa.....	5	.8	14.5	2	1.5	5.8
Diseases of the bones and organs of locomotion.....	18	2.7	52.2	3	2.2	8.7
Old age.....	7	1.1	20.3			
External causes.....	40	6.1	116.0			
Fractures (cause not specified).....	18	2.7	52.2			
Other external causes.....	22	3.3	63.8			
Ill-defined and other diseases.....	40	6.1	116.0	4	2.9	11.6

From the foregoing tabulation of the diseases we found that the chief causes of disability were 73 cases of rheumatism, 37 cases of tuberculosis of the lungs, 34 cases of cerebral hemorrhage and paralysis, and 25 cases of mental alienation (insanity). There were also 56 persons disabled by chronic headache and neurasthenia, and 29 cases of ulcers and other diseases of the stomach. Childbirth and the conditions incidental to childbearing caused 25 cases of disability. Other diseases and conditions were represented by smaller numbers, but were nevertheless of particular interest from a public-health standpoint. Four cases of typhoid fever, 16 cases of the acute infectious diseases of children, namely, measles, scarlet fever, whooping cough, and diphtheria, were reported. Twelve of this group of diseases were cases of whooping cough. The vital statistics records of the Rochester Bureau of Health confirm the view that these whooping-cough cases were in all probability left over from the months of June, July, and August, when the disease occurred at its maximum frequency for the year to date. Cancers were found in 10 cases.

The 37 patients who were disabled by tuberculosis of the lungs comprised 5.6 per cent of the total. Only 11 were being treated in hospitals and sanatoria; the rest were either up and about or in bed at home. We found in only one instance two cases of tuberculosis in the same family. Three cases of tuberculosis of the lungs not involving disability for work were also discovered.

With the exception of whooping cough, only a small relative number of infectious diseases, such as typhoid fever, measles, scarlet fever, diphtheria, and pneumonia, were reported. This is in part due to the low seasonal frequency of these diseases in the general population of Rochester at the time of the survey.

The records of the company's visiting nurse service in Rochester for the week of September 13 were also examined. They bear out the conclusion that Rochester at the time of the survey had relatively very few cases of communicable disease. The proportions of the various diseases and conditions nursed by the company's service can not be expected to conform strictly to those of the survey because of the larger representation of women and children nursed and the administrative rulings on the types of diseases acceptable for visiting nursing. Substantially, however, these visiting nurse service records point to the accuracy of the returns upon the schedules of the sickness survey.

Among the 137 cases of sickness which did not result in disability for work the largest number were rheumatism, 26 cases, diseases of the nervous system, neurasthenia, chronic headaches, etc., 14 cases, and diseases of the stomach, other than ulcers, 10 cases. Other diseases and conditions were represented by much smaller numbers. Table 3 gives a detailed list of diseases and conditions found among persons sick but able to work.

Duration of Sickness.

The durations of the several illnesses to the date of inquiry were also ascertained. Of the 661 persons unable to work, 8 were incapacitated one day, 41, or 6.2 per cent, were incapacitated less than one week. Among those sick and unable to work, 149, or 22.5 per cent, were incapacitated less than one month. On the other hand, persons able to work showed a smaller proportion of the cases under one month in duration. Rheumatism, neuralgia, neuritis, neurasthenia, and headache, which constitute the bulk of the cases sick and unable to work, were for the most part longer than one month in duration, and therefore influence the figures for the entire group. A considerable number of the cases were of long duration; thus, 128, or 19.4 per cent, were between one year and three years. Of the cases with disability, 177 cases, or 26.8 per cent, lasted over three years. The following tables show the durations, to the date of the inquiry, of the cases of sickness for the principal diseases and conditions:

TABLE 4.—*Durations of sicknesses to date of inquiry, classified by sex and by extent of disability.*

Disease or condition: Sex.	Number of persons sick for specified duration periods.												
	All durations.	1 day.	Over 1 day and under 1 week.	1 week and under 2 weeks.	2 weeks and under 3 weeks.	3 weeks and under 1 month.	1 month and under 2 months.	2 months and under 3 months.	3 months and under 6 months.	6 months and under 1 year.	1 year and under 3 years.	3 years and over.	Not specified.
TOTAL SICK PERSONS.													
All diseases and conditions.....	798	8	35	48	38	37	52	27	44	64	158	222	65
Males.....	355	3	12	24	16	14	23	11	21	35	72	98	26
Females.....	443	5	23	24	22	23	29	16	23	29	86	124	39
SICK AND UNABLE TO WORK.													
All diseases and conditions.....	661	8	33	42	34	32	39	24	36	56	128	177	52
Males.....	296	3	12	21	12	10	16	10	16	32	59	82	23
Females.....	365	5	21	21	22	22	23	14	20	24	69	95	29
Tuberculosis of the lungs.....	37					2	1	1	2	9	13	5	4
Males.....	19						1		1	7	5	2	3
Females.....	18					2		1	1	2	8	3	1
Rheumatism.....	73		1	1	1	1	2	3	3	7	18	34	2
Males.....	30			1			2	3	1	2	8	12	1
Females.....	43		1		1	1			2	5	10	22	1
Cerebral hemorrhage, apoplexy, paralysis without specified cause.....	34		1		1	1		1	1	2	9	17	1
Males.....	20		1			1		1		1	5	10	1
Females.....	14				1				1	1	4	7	
Neuralgia, neuritis, other diseases of the nervous system.....	61		3	2	3	3	3	2	3	10	13	10	9
Males.....	17		1	1	1			1		5	3	2	3
Females.....	44		2	1	2	3	3	1	3	5	10	8	6
Forms of mental alienation.....	25								1		7	13	4
Males.....	14										3	8	3
Females.....	11								1		4	5	1
Organic diseases of the heart.....	28			1	4	1	1		3	3	9	6	
Males.....	14			1			1		1	2	7	2	
Females.....	14				4	1			2	1	2	4	
Ulcer and other diseases of the stomach.....	29	3	3	3	2	3	2	1	2		6	3	1
Males.....	14	1	2	2	1	1	1	1			4	1	
Females.....	15	2	1	1	1	2	1		2		2	2	1
Appendicitis.....	14		1		3	1	3		2	2	1		1
Males.....	5						1		2	2			
Females.....	9		1		3	1	2				1		1
Bright's disease and other diseases of the kidneys.....	18			1		1			1	3	6	5	1
Males.....	5								1	1	1	2	
Females.....	13			1		1				2	5	3	1
Fractures.....	18	1	1	3	3	1	4		2		3		
Males.....	14	1	1	2	3	1	2		1		3		
Females.....	4			1			2		1				
All other diseases and conditions.....	324	4	23	31	17	18	23	16	16	20	43	84	29
Males.....	144	1	7	14	7	7	8	4	9	12	20	43	12
Females.....	180	3	16	17	10	11	15	12	7	8	23	41	17

Considered under the head of disease we find that we can make a sharp distinction in durations for the acute and chronic conditions. Thus, the 37 tuberculosis cases were of long duration, only 2 of them being for a period less than one month; 22 caused disability over long periods of time. Of the 73 cases of rheumatism sick and unable to work, 52, or 71 per cent, caused disability of one year or more.

Cerebral hemorrhage, apoplexy, and paralysis were observed as diseases of long duration, 26 of the 34 cases, or 76.5 per cent, having been ill one year or more. Organic diseases of the heart, diseases of the kidneys and the several forms of mental alienation all caused disability usually for periods more than one year.

On the other hand, the acute diseases and conditions, such as whooping cough, appendicitis, conditions incidental to childbirth, and fractures, were mainly of short duration, for the most part under one month. We have previously commented upon the high incidence of whooping cough and the fact that the observed cases of this disease were probably left over from the months of June, July, and August. The analysis by duration of illness confirms this comment.

Eighteen out of 24 puerperal cases caused disability for less than one month. Fractures involved disability for less than two months in 13 out of 18 cases.

TABLE 5.—Durations of sicknesses to date of inquiry, classified by sex and by extent of disability.

Disease or condition: Sex.	Number of persons sick for specified duration periods.												
	All durations.	1 day.	Over 1 day and under 1 week.	1 week and under 2 weeks.	2 weeks and under 3 weeks.	3 weeks and under 1 month.	1 month and under 2 months.	2 months and under 3 months.	3 months and under 6 months.	6 months and under 1 year.	1 year and under 3 years.	3 years and over.	Not specified.
SICK BUT ABLE TO WORK.													
All diseases and conditions.....	137	.....	2	6	4	5	13	3	8	8	30	45	13
Males.....	59	.....	.....	3	4	4	7	1	5	3	13	16	3
Females.....	78	.....	2	3	.....	1	6	2	3	5	17	29	10
Tuberculosis of the lungs.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2
Males.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Females.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
Rheumatism.....	26	.....	.....	.....	.....	.....	2	.....	1	3	7	13	.....
Males.....	11	.....	.....	.....	.....	.....	2	.....	1	1	4	3	.....
Females.....	15	.....	.....	.....	.....	.....	.....	.....	.....	2	3	10	.....
Cerebral hemorrhage, apoplexy, paralysis without specified cause.....	4	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	2	1
Males.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....
Females.....	2	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1
Neuralgia, neuritis; other diseases of the nervous system....	14	.....	.....	.....	.....	1	1	1	1	1	3	3	3
Males.....	3	.....	.....	.....	.....	1	1	.....	.....	.....	.....	1	.....
Females.....	11	.....	.....	.....	.....	.....	.....	1	1	1	3	2	3

TABLE 5.—*Durations of sicknesses to date of inquiry, classified by sex and by extent of disability—Continued.*

Disease or condition: Sex.	Number of persons sick for specified duration periods.												
	All durations.	1 day.	Over 1 day and under 1 week.	1 week and under 2 weeks.	2 weeks and under 3 weeks.	3 weeks and under 1 month.	1 month and under 2 months.	2 months and under 3 months.	3 months and under 6 months.	6 months and under 1 year.	1 year and under 3 years.	3 years and over.	Not specified.
SICK BUT ABLE TO WORK—CON.													
Organic diseases of the heart.....	6	.....	.....	.....	.....	.....	.....	.....	1	.....	1	3	1
Males.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Females.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	3	1
Ulcer and other diseases of the stomach.....	11	.....	.....	.....	1	.....	2	.....	2	2	1	2	1
Males.....	5	.....	.....	.....	1	.....	1	.....	1	1	.....	.....	1
Females.....	6	.....	.....	.....	.....	.....	1	.....	1	1	1	2	.....
Appendicitis.....	2	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....
Males.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Females.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Bright's disease and other diseases of the kidneys.....	5	.....	.....	.....	.....	.....	1	.....	.....	1	2	.....	1
Males.....	5	.....	.....	.....	.....	.....	1	.....	.....	1	2	.....	1
All other diseases and conditions.	66	.....	2	6	3	4	6	1	3	1	16	20	4
Males.....	30	.....	.....	3	3	3	2	1	2	.....	7	9	.....
Females.....	36	.....	2	3	.....	1	4	.....	1	1	9	11	4

The duration of the illnesses of those sick but able to work was chiefly for long periods. Seventy-eight out of 137 cases of sickness not involving incapacity to work, or 56.9 per cent, were one year or more in length.

Rheumatism, diseases of the nervous system, organic diseases of the heart, and Bright's disease were responsible for a large part of illnesses over one year for those sick but able to work.

Attendance of Physician.

Without distinction of extent of disability, 61 per cent of the cases of sickness had a physician in attendance. This compares with a figure of 78.7 per cent in the cases of the company's visiting nurse service in Rochester, N. Y., during 1914. The number of sick persons in care of physicians outside of institutions was 399, or 50 per cent of the total sick. Only 45.3 per cent of those sick but able to work had physicians in attendance; for the group of sick persons incapacitated for work, 63.8 per cent employed physicians or were being treated in institutions. These figures vary but slightly for sex.

The proportion of cases with physician in attendance varied significantly with disease. Among those able to work, the figures ranged from 27.3 per cent for females suffering from neuralgia, neuritis, and other diseases of the nervous system, to 100 per cent for females afflicted with ulcers and other diseases of the stomach.

TABLE 6.—Cases attended by physician or treated in institution, classified by extent of disability for selected diseases.

Extent of disability and sex.	Physician in attend- ance.	Physician not in attendance.	Per cent with phy- sician in attendance.
Total sick.....	484	314	61.0
Able to work.....	62	75	45.3
Males.....	26	33	44.1
Females.....	36	42	46.2
Not able to work.....	422	239	63.8
Males.....	181	116	60.9
Females.....	241	123	66.2
Above facts considered with respect to principal diseases:			
ABLE TO WORK.			
Rheumatism:			
Males.....	4	7	36.4
Females.....	4	11	26.7
Neuralgia, neuritis, and other diseases of the nervous system:			
Males.....	1	2	33.3
Females.....	3	8	27.3
Ulcer and other diseases of the stomach:			
Males.....	3	2	60.0
Females.....	6		100.0
Bright's disease and other diseases of the kidneys:			
Males.....	4	1	80.0
All other diseases and conditions:			
Males.....	14	21	40.0
Females.....	23	23	50.0
NOT ABLE TO WORK.			
Tuberculosis of the lungs:			
Males.....	17	2	89.5
Females.....	15	3	83.3
Rheumatism:			
Males.....	13	17	43.3
Females.....	20	23	37.7
Cerebral hemorrhage, apoplexy, paralysis without specified cause:			
Males.....	11	9	55.0
Females.....	12	2	85.7
Neuralgia, neuritis, and other diseases of the nervous system:			
Males.....	7	10	41.2
Females.....	25	18	58.1
All other diseases and conditions:			
Males.....	132	78	62.9
Females.....	168	79	68.0

Economic Loss from Sickness.

The sickness rates developed by this survey are for many reasons minimal. Seasonal conditions were favorable in a month which for Rochester has less mortality than the monthly average for the year. The application of the sickness rates derived from the survey to the computation of sickness losses in the community generally, will therefore produce conservative figures. The estimated male population of Rochester 15 years of age and over for the year 1915 is 92,552. On the basis of the above sickness rates we may conclude that there are throughout the year at least 2,147 males constantly sick. This means approximately 644,000 days of disability for males alone, for we may count on 300 working days per year per individual. At an average daily wage of \$2, the wage loss alone for a year in a city like Rochester would be \$1,288,000, and this figure, we have observed, is a minimum. It does not include cost of medical care, drugs, nursing, etc. The number of females in Rochester 15 years of age and over in the same year is estimated to be 93,392, which, at

the rate of sickness found, would give 2,400 cases of sickness continuing throughout the year. The economic loss sustained through this disability of the females is doubly difficult to estimate because of the uncertainty of the number engaged in gainful occupations.

Supplementary Survey at Trenton, N. J.

In October, 1915, a second survey of sickness was undertaken in Trenton, N. J. Table 7 gives the principal facts of the survey by extent of disability. The analysis is based upon a much smaller number of reports. In Trenton 76.4 per cent of the sicknesses among males involved incapacity to work; the Rochester figure was 82.8 per cent. Among females reported sick, 78 per cent were disabled from work.

TABLE 7.—*Trenton, N. J., October, 1915, sickness classified by extent of disability and sex.*

Extent of disability.	Persons.		Males.		Females.	
	Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.
All classes.....	180	100.0	89	100.0	91	100.0
Unable to work.....	139	77.2	68	76.4	71	78.0
In bed.....	71	39.4	30	33.7	41	45.1
At home.....	45	25.0	18	20.2	27	29.7
In hospital.....	26	14.4	12	13.5	14	15.4
Up and about.....	68	37.8	38	42.7	30	32.9
Able to work.....	41	22.8	21	23.6	20	22.0

TABLE 8.—*Trenton, N. J., October, 1915, sickness, number of cases and rates, by age and sex.*

Sex and age period.	Number of persons exposed.	Total sick persons.		Sick persons unable to work.	
		Number.	Per 1,000 exposed.	Number.	Per 1,000 exposed.
MALES.					
All ages.....	3,491	89	25.5	68	19.5
Under 15.....	1,155	12	10.4	10	8.7
15 to 24.....	664	14	21.1	9	13.6
25 to 34.....	582	13	22.3	10	17.2
35 to 44.....	446	7	15.7	6	13.5
45 to 54.....	377	11	29.2	8	21.2
55 to 64.....	189	22	116.4	15	79.4
65 and over.....	71	10	140.8	10	140.8
Unknown age.....	7				
Ages 15 and over.....	2,336	77	33.0	58	24.8
FEMALES.					
All ages.....	3,480	91	26.1	71	20.4
Under 15.....	1,104	19	17.2	16	14.5
15 to 24.....	633	6	9.5	5	7.9
25 to 34.....	620	17	27.4	14	22.6
35 to 44.....	489	13	26.6	11	22.5
45 to 54.....	346	14	40.5	11	31.8
55 to 64.....	189	11	58.2	6	31.7
65 and over.....	94	10	106.4	7	74.5
Unknown age.....	5				
Ages 15 and over.....	2,376	72	30.3	55	23.1

For all sicknesses at all ages, males showed a rate of 25.5 per 1,000 exposed; for females the figure was 26.1 per 1,000. Considering only the ages 15 and over, the male rate was 33.0 per 1,000, the female rate 30.3 per 1,000.

Sicknesses involving incapacity to work occurred at a rate of 24.8 per 1,000 among males 15 years of age and over, and among females at a rate of 23.1 per 1,000. Table 8 gives the sickness rates by age periods. The rates for females with few exceptions are higher than for males of the corresponding age periods, and the amount of sickness also increases with age for both sexes. Our experience with the Trenton survey thus confirms the main findings of the Rochester returns which, based upon larger numbers, are more precise statements of prevailing sickness in the community at the time of inquiry.

Comparison With Other Enumerations of Sickness.

The State of Massachusetts, in 1905, enumerated the acute and chronic diseases in the Commonwealth on Census Day, May 1. The tabulated results are not available, however, in such form as to make comparisons with our Rochester survey possible. The only available Federal Census publications on sickness in the United States are those prepared by Dr. John S. Billings from the schedules of the Tenth Census, 1880. As a matter of historical interest we are quoting his table for the State of Rhode Island. The enumeration in this State was supervised by a competent director and the figures are entitled, in Dr. Billings's opinion, to confidence.

TABLE 9.—*Number of persons sick and unable to work per 1,000 of population in Rhode Island on June 1, 1880, classified by sex for age periods 15 and over.*

Age period.	Male.	Female.	Ratio, male to female rate.
Ages 15 and over.....	14.8	11.9	124.4
15 to 25.....	8.6	7.7	111.7
25 to 35.....	7.5	10.2	73.5
35 to 45.....	12.6	8.8	143.2
45 to 55.....	17.7	12.5	141.6
55 to 65.....	28.7	20.0	143.5
65 and over.....	48.0	29.1	164.9

Intrinsic distinctions of time, place, and other circumstances make extended comparisons impossible. No detailed data for diseases and conditions were published. The figures, it must be remembered, excluded the blind, deaf and dumb, insane, and crippled.

American literature on community sickness statistics is replete with reference to the experience of European sickness insurance institutions. Indeed, various estimates of sickness disability among the American working classes have been made upon the basis of the

German and Austrian results. None of these estimates can be said to apply directly to conditions in the United States, and qualified estimates of the amount of sickness can be computed only upon the rates developed either by a comprehensive system of sickness insurance or by an extension of the survey method here outlined. It is of prime interest to note that the main characteristics of our tabulations agree with those of the leading sickness insurance organizations in Europe. The statistics for the Local Sick Benefit Society of Leipzig, Germany, the sickness insurance funds of Austria, and other available data present practically the same facts of sickness variation relatively by sex and age as do our results. Numerous limitations upon the European data render detailed comparisons impossible, but the comparative frequency of sickness by sex and age still remains to confirm our conclusions from the Rochester survey.

The enumeration method of determining the prevalence of sickness in a community, as exemplified in this study, has, we believe, an established value. We are mindful, however, of the necessity for bringing together other sources of information on the amount of sickness which prevails in this country. Sickness surveys made in conjunction with the decennial censuses of the Federal Government should prove most helpful. In like manner, the statistics of hospitals, of visiting nurse associations, and of institutions for the care of the blind, the crippled, and the insane should be collected and analyzed. It is only through the coordination of such sources that the total cost of sickness and accident disability in the community will be ascertained and proper measures organized for its control. The life conservation movement of to-day, as a basis for a constructive program, has a deep need for a scientific and accurate measure of sickness and of its effects.

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